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## PALEOBOTANY.

**Elements of Paleobotany.**<sup>1</sup>—The somewhat remarkable developments in the science of fossil plants which have taken place during the last decade receive renewed expression in the issue of an important work from the pen of R. Zeiller, already so well known to paleontologists for his extensive and admirable work on the fossil flora of France. In his *Éléments de Paléobotanique* M. Zeiller deals with fossil plants from the standpoint of the botanist conformably to modern views of botanical science. Though not so ambitious a work as Seward's *Fossil Plants*, the present work follows on similar lines with respect to general treatment of the subject, but treats of somewhat different types, thereby supplementing the former in important respects. It discusses

1. The mode of preservation of fossil plants.
2. Classification and nomenclature.
3. A systematic treatment of the various groups of plants, commencing with the Thallophytes.
4. The succession of floras and their relation to climatic conditions.
5. General considerations bearing upon the evolution of plant forms as indicated by the evidence of fossil plants.

Probably the most striking feature of the book is the recognition which it gives to Pontonié's Cycadofilices, a group of plants now definitely recognized as occupying an important and intermediate position between the ferns and the cycads—a fact which serves to bring into conspicuous relief the important nature of the recent developments of paleobotanical science. The work is valuable and suggestive, and will find a ready welcome on the part of botanists.

D. P. P.

**Notes.**—The material dealt with by David White (*Nineteenth Ann. Rept. U. S. Geol. Surv.*, Pt. III) in his report on the "Fossil Plants from the McAlister Coal Field, Indian Territory," furnishes essentially the first paleobotanical data respecting the Carboniferous of the regions southwest of Kansas, and it therefore affords the first instance relative to the vertical range and distribution of the Northern Coal Measures within the southwestern portion of the western interior basin, supplying an important basis for the correlation of

<sup>1</sup> Zeiller, R. *Éléments de Paléobotanique*. Paris, Carré et Naud, 1900. 8vo, 417 pp., illustrated.

the plant-bearing series of that region with the Coal Measures in other parts of the United States. In all, sixty-nine forms or species are represented. The types of *Mariopteris*, *Neuropteris*, and *Pecopteris* are especially abundant and prominent, while the relatively small percentages of species common to the two stages show that there are marked differences between the floral characters of the three stages represented in the McAlister coal field.

Recent studies by David White (*Bull. Geol. Soc. Amer.*, Vol. II, p. 145) present an interesting discussion of the relative ages of the Kanawha and Allegheny series, and afford an excellent illustration of the value of correctly interpreted paleobotanical data in determining the age of deposits.

The latest contribution to our knowledge of that remarkable collection of Mesozoic cycads now to be found in the Yale Museum is from the pen of Professor L. F. Ward (*Amer. Journ. Sci.*, Vol. X, p. 327), who details the history of the 731 specimens there brought together, and adds to his previous lists descriptions of seven new species embraced in hitherto unclassified material.

D. P. P.